

Energy Policy Act of 2005, Section 1234 Economic Dispatch Study

Questions to Stakeholders

The State of Hawaii is unique because the six populated islands are served by electric operating systems that are not interconnected. Hawaiian Electric Company (HECO), and its two subsidiaries Hawaii Electric Light Company (HELCO), and Maui Electric Company (MECO), serve five of the six islands. The sixth island is served by an electric cooperative. Unlike many jurisdictions on the mainland, Hawaii does not have a “spot market” for energy transactions.

Following are Hawaiian Electric Company’s response to the questions to the stakeholder. These responses were prepared from the perspective of an isolated electric system that is not interconnected with another utility. Caution should therefore be exercised in combining these responses with those of other utilities whose conditions are markedly different.

1. HECO generally dispatches generators (both utility owned and non-utility owned) on an incremental cost curve basis, however, there are exceptions (refer to the response to question 2). The dispatch of the generators is generally based on providing the next increment of generator output at the least cost. The utility company on each of the respective islands is responsible for the control and dispatch of the generators.
2. The definition is appropriate and recognizes that utilities need to manage changes to the electrical system and may need to implement changes in operation as a result. Besides the operational limits of the transmission and generation facilities utilities need to contend with the requirements of purchase power agreements between the utility and non-utility generators. These agreements may impose operating obligations on the utility. Events such as forced outages of utility generators, voltage or stability limits, transmission system constraints (such as line and transformer loadings), or generation reserve requirements may impact the utilities’ ability to meet these obligations. In these cases it may be necessary to operate the generating units off economic dispatch.
3. At this time there are no conditions that warrant a difference in how a utility generator or a non-utility generator is dispatched. Those differences that may occur are usually the result of the conditions described in response to question 2.
4. HECO has no recommendations on this issue. HECO’s objective has been and will continue to be to provide customers electricity safely, reliably and at the lowest reasonable cost. The current economic dispatch practice is generally consistent with the objective of minimizing cost is met. Non-utility generators are, and should be, dispatched in accordance with these objectives.

5. HECO would be concerned with any practice which has the potential to deteriorate the quality of service and the reliability of supply to the consumers. The utility has an obligation to serve customers in a manner consistent with tariff requirements that define service quality as well as ensuring the reliability of service to the customer. If there is greater use of a non-utility generator that causes voltage or frequency swings to the consumer the utility will need to make adjustments to mitigate the impact of these non-utility generators. Additionally the reliability of the generation resource will need to be determined as operating changes may be necessary to compensate for the potential loss of a part or all of a non-utility generator.
6. Electrical grid reliability may not be directly affected by economic dispatch but indirectly by its potential impact on the ability of the utility infrastructure and operation to accept the power from the non-utility generator. The grid and the mix of generation will need to be balanced so that the system can absorb the additional non-utility generation without creating adverse consequences to the system such as frequency and voltage fluctuations. In addition, during situations in which there are severe swings in power, voltage, or frequency the non-utility generators should be capable of providing support to the grid to dampen these swings. Otherwise the loss of these generators can contribute to the decline of the system.